

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
14 June 2007 (14.06.2007)

PCT

(10) International Publication Number  
**WO 2007/065307 A2**

(51) International Patent Classification: **Not classified**

(21) International Application Number:  
PCT/CN2005/002149

(22) International Filing Date:  
10 December 2005 (10.12.2005)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): **INTEL CORPORATION** [US/US]; 2200 Mission College Boulevard, Santa Clara, CA 95052 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **LIU, Benjamin** [CN/CN]; Room 302, No. 264 South Shanxi Road, Shanghai 200001 (CN). **JIANG, Yunhong** [CN/CN]; Room 2107, No. 3, Lane 652, Dabuhe Road, Shanghai 200001 (CN).

(74) Agent: **CHINA PATENT AGENT (H.K.) LTD.**; 22/F, Great Eagle Centre, 23 Harbour Road, Wanchai, Hong Kong (CN).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: HANDLING A DEVICE RELATED OPERATION IN A VIRTUALIZATION ENVIRONMENT

(57) Abstract: Methods, system and machine-readable medium are described to handle a device related operation in a virtualization environment. In some embodiment, a kernel component of a virtual machine monitor may determine that a device related operation happens in a virtual machine through a operation transition from the virtual machine to the kernel component; and may determine whether the device related operation can be handled by a first virtual hardware device installed inside of the kernel component of the virtual machine monitor. In other embodiment, the kernel components may initiate an interrupt by the first virtual hardware device; and inject the interrupt from the first virtual hardware device to the virtual machine through another operation transition from the kernel component to the virtual machine.



WO 2007/065307 A2